ENVIRONMENT AND WATERSHED HEALTH

Element Overview

The goals and policies in this chapter convey the City's intent to:

- Ensure that Tacoma's built and natural environments function in complementary ways and are resilient to climate change and natural hazards.
  Protect people, property and the environment in areas of natural hazards.
- Ensure that all Tacomans have access to clean air and water, can experience nature in their daily lives and benefit from development that is designed to lessen the impacts of natural hazards and environmental contamination and degradation, now and in the future.
- Achieve the greatest possible gain in environmental health City-wide over the next 25 years through proactive planning, investment and stewardship.
- Plan at a watershed scale to restore and protect natural resources that contribute to watershed health.

Why does this matter?

Situated in the Puget Sound Lowlands, at the mouth of the Puyallup River Valley and the tidal waters of Commencement Bay, Tacoma's natural resources provide an array of ecologically, economically and aesthetically valuable ecosystem services. Our river, streams, aquifers and floodplains convey and store water and provide critical habitat for native fish and aquatic species. Our natural areas and vegetation clean and cool Tacoma's air and water, soak up rainwater and provide wildlife habitat. The deep waters of Thea Foss support international trade, commerce and sea life. Many of these resources also trap carbon and reduce urban heat island effects. These natural resources are key contributors to Tacoma's identity, economy, reputation and sense of place.

The City has made a commitment to restoring and maintaining a high-quality environment; however many of Tacoma's natural resources have been lost over time or are currently at risk. Development increases stormwater runoff which in turn erodes stream channels and pollutes waterways making them unable to support healthy habitat. There is concern that anticipated growth and development will result in substantial tree removal, continued habitat loss and negative impacts on at-risk plant and animal species.

The City's land use plans and investments have been, and will continue to be, instrumental in helping to guide and understand effective approaches to preserving natural resources. In addition, the City has invested time and money to restore our

watersheds. The goals and policies in this chapter protect these investments and help the City meet various regulations to protect public health and the environment. With thoughtful guidance, the community can work together to face new challenges, and achieve and sustain healthy watersheds and a healthful environment for all Tacomans as the city grows.

Proposed Amendments

As part of our ongoing commitment to safeguarding the wellbeing of our community and preserving our natural resources, we are integrating several key plans into the Environmental Element of the One Tacoma Plan. These plans are critical to advancing our environmental goals and ensuring that our strategies align with broader, city-wide initiatives for a resilient, healthy, and sustainable future.

This update to the Environmental Element is crucial to addressing the evolving needs of Tacoma as it grows and faces increasing pressures on its natural resources.

Structure

- Stronger emphasis on watershed-scale and connections to the Comprehensive Plan's vision of 15-minute neighborhoods supporting access to nature in everyday life.
- Alignment with:
  - 2019 Urban Forest Plan – Add consideration of urban heat island effect and areas underserved by urban tree canopy.
  - 2023 Climate Action Plan and Adaptation Strategy – Consider incorporation of GHG reduction targets, key actions, and data/performance measures.
  - 2023 Puyallup Tribe Comprehensive Plan – review for opportunities to update City goals and policies to align with the Tribe's Comprehensive Plan.
  - 2024 Urban Watershed Plan and Stormwater Management Program/NPDES - Stormwater management and water quality are areas of focus in GMA and VISION 2050 that need to be more wholly addressed in the Comprehensive Plan.
- Highlight the Comprehensive Plan's overall Health and Equity themes
- Remove redundant policies

Language

- Opportunities to highlight disproportionality in access to environmental assets and equity goals
- Align with HEAL Act "overburdened communities" terminology

- Add discussion on maximizing multiple benefits of strategies to preserve and increase ecological services
- Shift language from “no net-loss" to “net-gain” in ecological functions and environmental assets

The Environment and Watershed Health Element of the Comprehensive Plan addresses the following land use planning requirements of the Growth Management Act (GMA):

- **Groundwater Protection**: Safeguarding the quality and quantity of groundwater used for public water supplies.
- **Environmental Justice:** Consideration of environmental justice, including efforts to avoid creating or worsening environmental health disparities.
- **Promoting Active Transportation and Reducing Vehicle Dependency:** Planning approaches that promote physical activity and reduce vehicle miles traveled.
- **Stormwater Management:** Draining, flooding, and stormwater runoff and guidance for corrective actions to mitigate or cleanse those discharges that pollute waters of the state.
- **Wildfire Risk Reduction:** Utilizing land use planning tools to reduce and mitigate wildfire risk.
- **Critical Areas Protection:** Designation and protection of Critical Areas – Wetlands, fish and wildlife habitat protection areas, frequently flooded areas, critical aquifer recharge areas and geologically hazardous areas – using the best available science.

Policy Framework

Together, the State Growth Management Act (GMA) and the Regional Growth Strategy and Multi-County Planning Policies in the Puget Sound Regional Council’s (PSRC) VISION 2050 Long Range Plan, form the legal and regulatory framework that guides the development and content of local comprehensive plans. The relevant GMA laws as well as the guidance PSRC uses to review local comprehensive plans for certification, are listed below.

Growth Management Act Goals and Policies (RCW 36.70A)

The GMA establishes 15 planning goals to guide planning and policy development efforts. Three of these 15 speak specifically to Environment and Watershed Health:
RCW 36.70A.020

(9) Open space and recreation. Retain open space and green space, enhance recreational opportunities, enhance fish and wildlife habitat, increase access to natural resource lands and water, and develop parks and recreation facilities.
(10) Environment. Protect and enhance the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.
(14) Climate change and resiliency. Ensure that comprehensive plans, development regulations, and regional policies, plans, and strategies under RCW 36.70A.210 and chapter 47.80 RCW adapt to and mitigate the effects of a changing climate; support reductions in greenhouse gas emissions and per capita vehicle miles traveled; prepare for climate impact scenarios; foster resiliency to climate impacts and natural hazards; protect and enhance environmental, economic, and human health and safety; and advance environmental justice.

- *(Note: Climate Change Element not required for Tacoma until 2029)*

State Regulatory Framework for Updating the Environment and Watershed Health Element

RCW 36.70A.070 (1)- Amended 2023
(1) The land use element shall provide for protection of the quality and quantity of groundwater used for public water supplies. The land use element must give special consideration to achieving environmental justice in its goals and policies, including efforts to avoid creating or worsening environmental health disparities. Wherever possible, the land use element should consider utilizing urban planning approaches that promote physical activity and reduce per capita vehicle miles traveled within the jurisdiction, but without increasing greenhouse gas emissions elsewhere in the state. Where applicable, the land use element shall review drainage, flooding, and stormwater runoff in the area and nearby jurisdictions and provide guidance for corrective actions to mitigate or cleanse those discharges that pollute waters of the state, including Puget Sound or waters entering Puget Sound. The land use element must reduce and mitigate the risk to lives and property posed by wildfires by using land use planning tools…

(9)(a) A climate change and resiliency element that is designed to result in reductions in overall greenhouse gas emissions and that must enhance resiliency to and avoid the adverse impacts of climate change, which must include efforts to reduce localized greenhouse gas emissions and avoid creating or worsening localized climate impacts to vulnerable populations and overburdened communities.
(b) The climate change and resiliency element shall include the following sub elements:
(i) A greenhouse gas emissions reduction sub element;
(ii) A resiliency sub element.

WAC 365-196-405

(1) (c) The element must contain the following features:

Provisions for protection of the quality and quantity of ground water used for public water supplies.

(2) (e) Counties and cities must review drainage, flooding, and stormwater runoff in the area or nearby jurisdictions and provide guidance for corrective actions to mitigate or cleanse those discharges that pollute waters of the state, including Puget Sound or waters entering Puget Sound. Water quality information may be integrated from the following sources:

i. Planning and regulatory requirements of municipal stormwater general permits issued by the department of ecology that apply to the county or city.
ii. Local waters listed under Washington state's water quality assessment and any water quality concerns associated with those waters.
iii. Interjurisdictional plans, such as total maximum daily loads.

Per RCW 90.56.010, "Waters of the state" includes lakes, rivers, ponds, streams, inland waters, underground water, salt waters, estuaries, tidal flats, beaches and lands adjoining the seacoast of the state, sewers, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

WAC 365-196-485 (1)(d)

RCW 36.70A.070(1) requires counties and cities to provide for protection of the quality and quantity of ground water used for public water supplies in the land use element. Where applicable, the land use element must review drainage, flooding, and stormwater runoff in the area and in nearby jurisdictions, and provide guidance to mitigate or cleanse those discharges that pollute waters of the state, including Puget Sound or waters entering Puget Sound.

The Growth Management Act (GMA) requires the designation and protection of “Critical Areas” to prevent harm to the community from natural hazards and to safeguard natural resources. There are five types of critical areas defined by the GMA:

1. Wetlands
2. Areas with a critical recharging effect on aquifers used for potable water
3. Fish and wildlife habitat conservation areas
4. Frequently flooded areas
5. Geologically hazardous areas

Cities that are “fully planning” under the GMA must conduct a thorough review of their comprehensive plans and development regulations, including those related to critical

areas and natural resource lands, every 10 years in accordance with the schedule in RCW 36.70A.130.

Under RCW 36.70A.172 jurisdictions are required to incorporate the BAS in developing policies and regulations to protect the functions and values of critical areas.

RCW 36.70A.172 - Critical Areas Designation and Protection – Best Available Science
(1) In designating and protecting critical areas, cities shall include the best available science in developing policies and development regulations to protect the functions and values of critical areas. In addition, cities shall give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries.

WAC 365-190-080 Critical Areas
(1) Cities must protect critical areas. Cities required to plan under the act must consider the definitions and guidelines in this chapter when designating critical areas and when preparing development regulations that protect all functions and values of critical areas to ensure no net loss of ecological functions and values.
(2) Cities must include the best available science as described in chapter 365-195 WAC, when designating critical areas and when developing policies and regulations that protect critical areas. Cities must give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries. Cities are encouraged to also protect both surface and groundwater resources, because these waters often recharge wetlands, streams and lakes.
(3) Cities are encouraged to develop a coordinated regional critical areas protection program that combines interjurisdictional cooperation, public education, incentives to promote voluntary protective measures, and regulatory standards that serve to protect these critical areas.
(4) Cities should designate critical areas by using maps and performance standards.

a) Maps may benefit the public by increasing public awareness of critical areas and their locations. Staff may also benefit from maps which provide a useful tool for determining whether a particular land use permit application may affect a critical area. However, because maps may be too inexact for regulatory purposes, cities should rely primarily on performance standards to protect critical areas. Cities should apply performance standards to protect critical areas when a land use permit decision is made.
b) Cities should clearly state that maps showing known critical areas are only for information or illustrative purposes.

No net loss is measured relative to the baseline of existing conditions; the GMA only requires the prevention of further harm to critical areas, not the enhancement of critical areas that were previously damaged.

VISION 2050

PSRC's VISION 2050 sets a four-county regional plan for growth. The multicounty planning policies (MPPs) developed as part of this effort provide a framework and reference guide for comprehensive plan updates.

VISION 2050 promotes protecting and restoring natural systems, conserving habitat, improving water quality, and reducing air pollutants. Since the health of all residents and the economy is connected to the health of the environment, therefore planning should consider the impacts of land use, development, and transportation on the ecosystem and use the best environmental information available.

Policies and programs should:

Environment	
Protect and restore the environment	**Policy Reference**
Protect critical areas, habitat, and water quality and coordinate planning with adjacent jurisdictions, tribes, countywide planning groups, and watershed groups	MPP-En-1, En-6, En-11-12, En-14, En-16, En-Action-3
Advance integrated and interdisciplinary approaches for environmental planning and assessments	MPP-En-2
Promote innovative and environmentally sensitive development practices in siting, design, materials selection, construction, and maintenance	MPP-En-5
"New Policy" Support programs to ensure that all residents, regardless of race, social, or economic status, have clean air, clean water, and other elements of a healthy environment and prioritize the reduction of impacts to vulnerable populations that have been disproportionately affected	MPP-En-3-4, En-7-8, En-21
"New Policy" Support and incentivize environmental stewardship on private and public lands	MPP-En-10
"New Policy" Identify open space, trail, and park resources and needs, and develop programs for protecting and enhancing these areas	MPP-En-11-12, En-15, En-Action-4
Protect and restore native vegetation and tree canopy	MPP-En-9, En-13

"New Policy" Protect and restore hydrological functions and water quality, including restoring shorelines and estuaries, removing fish-blocking culverts, reducing use of toxic products, and retrofitting basins to manage stormwater	MPP-En-16-20
Ensure all federal and state air quality standards are met and reduce emissions of air toxics and greenhouse gases	WAC 173-420-080 MPP-En-22
Climate Change	
Reduce greenhouse gas emissions in support of state, regional, and local reduction goals	**Policy Reference**
"New Policy" Support achieving regional greenhouse gas emission reduction goals by: • "New Policy" Electrifying the transportation system, • Reducing vehicle miles traveled through increasing alternatives to driving alone and using land use strategies that reduce trips and trip length, and • Expanding the use of conservation, alternative energy sources, and energy management technology	MPP-CC-1, CC-3, CC-5, CC-11-12, CC-Action-3
Reduce building energy use through green building and retrofit of existing buildings	MPP-CC-2, CC-Action-3, DP-46
"New Policy" Protect and restore natural resources that sequester and store carbon	MPP-CC-4
"New Policy" Address impacts to vulnerable populations and areas that have been or will be disproportionately affected by climate change	MPP-CC-6, CC-8, CC-Action-3, CC-Action-4
"New Policy" Identify and address the impacts of climate change and natural hazards on the region to increase resilience	MPP-CC-7-10, CC-Action-4
"New Policy" Address rising sea water by siting and planning for relocation of hazardous industries and essential public services away from the 500-year floodplain	MPP-CC-10
Land Use/Development Patterns	

Promote healthy communities	Policy Reference
"New Policy" Reduce health disparities and improve health outcomes	MPP-RC-3, DP-18

Addressing Priority Outcomes

In the first phase of the comprehensive planning process, the project team identified key outcomes that assess a baseline of wellbeing across a community. The 19 selected outcomes reflect the key themes for this plan update: equity, public health, sustainability, opportunity, and safety. Outcomes were evaluated geographically, comparing results across eight Tacoma neighborhoods.

The **Environment and Watershed Health** Element addresses these priority outcomes:

1. **Climate impacts, Air Quality and Urban Heat Index.** Overburdened communities, that is communities that experience disproportionate environmental harms and risks due to exposures or greater vulnerability to environmental hazards, tend to be overwhelmingly BIPOC communities and low-income communities. These communities will be most impacted by climate change and climate exasperated events such as wildfires and heat waves. Tacoma's Climate Action Plan and Climate Adaption Strategy are committed to implementing actions and strategies that would prioritize these frontline communities while protecting and enhancing the city's environmental assets.
2. **Life expectancy at birth.** Longer life expectancy is correlated with higher environmental quality, which includes the quality of the air and water. Policies that protect and improve Tacoma's natural environment and watershed health can mitigate the chronic health impacts of air pollution and water contamination, including respiratory and cardiovascular diseases, that decrease life expectancy.
3. **Access to healthy foods.** When healthy, Tacoma's watersheds and natural environment nurture food production through local farms. A healthy, biodiverse ecosystem supports food diversity, which promotes nutritional health and is a key component of access to healthy foods. As watersheds are connected to larger bodies of water and impact surrounding ecosystems, their health impacts food systems beyond local food production.

Community Input

The Project Team compiled qualitative data from nine community visioning workshops and categorized it into overarching themes representing community priorities for Tacoma's growth over the next 25 years. Additionally, the Project Team reviewed community input gathered through previous engagement activities that occurred between 2016 to present day in the Tacoma Existing Engagement Gap Analysis report.

In recent years, various initiatives focused on environmental and watershed health have emerged, including the Urban Watershed Protection Plan and the Urban Forest Management Plan. Concerns about the impact of human activities on natural spaces, particularly the cleanliness of local water bodies, were highlighted by Tacoma residents through surveys and workshops. The restoration and cleanup of natural areas were identified as top priorities, alongside supporting green jobs and enhancing infrastructure.

Community members expressed a desire to collaborate with the Puyallup Tribe on environmental stewardship. Challenges identified included the need for increased funding for groundwater protection and infrastructure maintenance. Air and water pollution emerged as significant health concerns, exacerbated by recent wildfire events. Additionally, the UWPP noted underrepresentation of Latinx/Hispanic and renter groups in their engagements, with the most active watersheds being Foss Waterway, Flett Creek, and North Tacoma.

04 Environment + Watershed Health

ENVIRONMENT + WATERSHED HEALTH GOALS

- **GOAL EN–1** All Tacomans, especially those in historically overburdened communities, have access to clean air and water, and can experience nature in their daily lives.
- **GOAL EN-2** Tacoma's Urban Forest is healthy and expansive.
- **GOAL EN–3** Net gains in environmental health are experienced by all Tacomans, especially those located in historically overburdened communities.
- **GOAL EN–4** Tacoma is a resilient and safe city, with protections in place for communities and properties most at risk from climate events and natural hazards.
- **GOAL EN–5** Black, Indigenous, and People of Color (BIPOC) and historically overburdened communities are protected from climate and environmental health risks and have equitable access to clean, healthy parks, tree canopies, green spaces, waterways, and other natural assets that support well-being and resilience
- **GOAL EN–6** Watershed-scale planning restores and protects natural resources that will maximize the net-gains in ecological functions of Tacoma's environmental assets.

Environment + Watershed Health

04

4.1 Introductory Context

What is this chapter about?

The goals and policies in this chapter convey the City's intent to:

- Improve the health and general welfare of communities in Tacoma by promoting the planning, management, restoration, and preservation of Tacoma's environmental assets, which encompasses the City's natural resources, ecosystems, and the services they provide.
- Avoid and minimize the community's exposure to natural hazards, including geologic hazards and flooding hazards.
- Improve air quality for all Tacoma community members and lower air temperature resulting from the urban heat island effect.
- Improve water quality in rivers, streams, marine waters, floodplains, groundwater, and wetlands.
- Set policies to achieve a net gain in habitat functions and values in the city's environmental assets.
- Increase public awareness of the benefits of maintaining Tacoma's healthy watershed and environmental assets and how actions affect the health and livability of Tacoma and the greater Puget Sound.
- Develop an adaptive management strategy for the City of Tacoma for the anticipated impacts of climate change and sea level rise and reduce our contribution to greenhouse gas emissions.
- Facilitate communication and coordination among Tacoma community members and agencies to promote the preservation and restoration of Tacoma's valuable environmental assets.
- Increase access to nature in our everyday lives through proactive urban forest management and the planting and care of our community trees and living landscapes.

Book I: Core Policy Elements

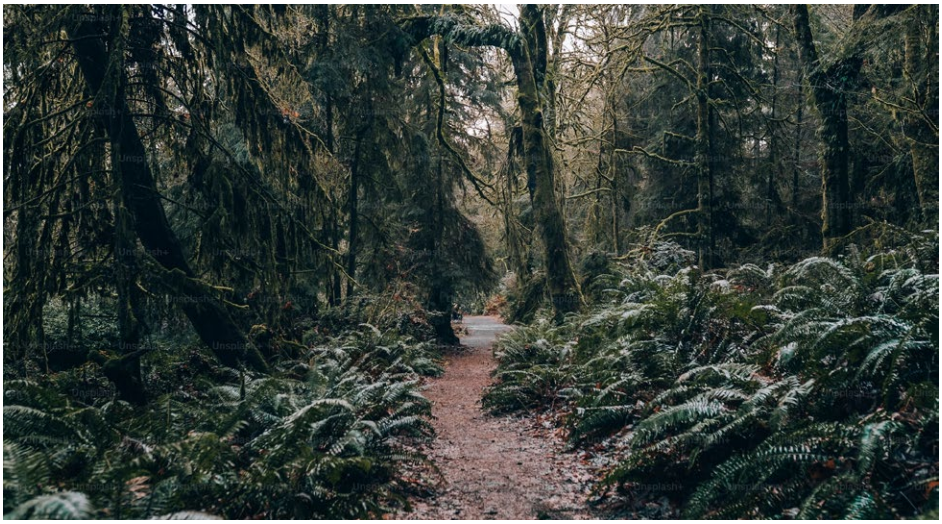
Contents

Why is this important?

Situated in the Puget Sound Lowlands, at the mouth of the Puyallup River Valley and the tidal waters of Commencement Bay, Tacoma's natural resources provide an array of ecologically, economically, aesthetically, and culturally valuable ecosystem services. The river, streams, aquifers, and floodplains convey and store water and provide critical habitat for native fish and other aquatic species. The city's urban forests clean and cool Tacoma's air and water, soak up rainwater, and provide wildlife habitat. The deep waters of Thea Foss Waterway support international trade, commerce, and sea life. Many of these resources also trap carbon and reduce the effects of urban heat islands. Parks and open spaces provide recreational opportunities to communities that help encourage physical activity and social connections. Many of the natural resources found within Tacoma, such as the river, streams, native plants, and shoreline, serve an important cultural role for the Puyallup Tribe of Indians, who are the original stewards of the land where Tacoma sits today. The City is committed to its role in honoring the Medicine Creek Treaty by protecting the environment and habitat where the treaty-protected natural resources are situated. These natural resources are key contributors to Tacoma's identity, economy, reputation, and sense of place and are essential to the cultural identity of the Puyallup Tribe.

The City has committed to restoring and maintaining a high-quality environment; however, many of Tacoma's natural resources have been lost over time or are currently at risk. Development increases stormwater runoff by removing trees and expanding impervious surfaces, which erodes and pollutes stream channels that flow into waterways, making them less capable of supporting a healthy habitat and can be harmful to biota. Without changing our approach, development could lead to unnecessary tree removal, habitat loss, and harmful effects on vulnerable plant, fish, and animal species.

The City's land use plans and investments have been, and will continue to be, instrumental in helping to guide and understand effective approaches to preserving natural resources. The City is committed to protecting and restoring its watersheds through proactive natural resource management. The goals and policies in this chapter protect these investments and help the City meet various regulations to protect public health and the environment. With thoughtful guidance, the community can work together to face new challenges, and achieve and sustain healthy watersheds and a resilient environment for all Tacomans as the city grows.



WHAT ARE TACOMA'S ENVIRONMENTAL ASSETS?
Tacoma's environmental assets include the following natural resources and ecosystems: rivers, lakes, streams, and associated riparian uplands; floodplains; riparian corridors; wetlands and buffers; groundwater; trees and urban forests; bays, estuaries, and marshes; shorelines; open space lands; biodiversity areas and corridors; and priority species. Maintenance, preservation, and protection of these assets contribute to a healthy watershed.

What we heard

There have been several engagements in recent years including Environmental Services' Strategic Plan outreach, the Urban Watershed Protection Plan, the Urban Forest Management Plan, and the Climate Action Plan. Across these engagements, environmental clean-up was a top priority, especially the cleanliness of streams, ponds, lakes, and beaches. Engagement showed a lot of concern for mitigating the impact that human activities and continued development has on Tacoma's natural resources and receiving waters like the Puget Sound. Air and water pollution were also a high concern due to impacts on community health. Most Tacomans favor moving away from fossil fuel facilities and improving transportation to enhance the transit, bicycle, and pedestrian experience, thereby reducing the city's greenhouse gas emissions. Both community members and staff support the integration of environmental and watershed health action plans with other goals such as green jobs, climate action, equity, parks and green spaces, transportation, and housing.

ENGAGEMENT EFFORTS

During the Comprehensive Plan update, Environmental Services collected new feedback to guide updates and future and continued implementation of the City's Stormwater Management Program using an interactive Watershed Prioritization Map and a brief Stormwater Community Survey. These engagements identified key issues such as pet waste, litter, tree shortages, and street flooding as well as specific geographic locations for the City to focus its efforts. The Stormwater Community Surveys showed only 49 percent of respondents were aware that stormwater in Tacoma is discharged untreated into surrounding waters, and 67 percent were unaware of what their surface water utility bill funds. These findings underscore the need for enhanced public education and engagement regarding stormwater management. Additional findings from the surveys identified that the most important community stormwater priorities were stormwater treatment, increased tree planting, property acquisition to preserve trees, and more pet waste stations. The most commonly observed stormwater problems included pet waste, litter and trash dumping, and oil leaks from vehicles.

During the two-year process of community engagement to develop the City's Urban Forest Management Plan, outreach and engagement included community surveys, public meetings, analysis of Tacoma's customer service call requests related to natural resources, online engagement over the plan's interactive website, and a series of meetings with stakeholder and special interest groups, as well as City Commissions and Committees.

The community engagement effort provided a broad perspective of the challenges facing Tacoma's urban forest as well as potential opportunities. One of several surveys with approximately 1,500 respondents identified that the majority (88%) strongly agree that public trees contribute to a healthy environment and improve the overall quality of life, and urban trees are very important because of their ability to improve air quality (90%) and water quality (88%). Furthermore, 91% believe the City should "aggressively work toward meeting the 30% tree canopy cover goal", and 42% feel tree planting and adding more trees is an urgent need, while the community generally (42%) feels the number of trees, as well as the health of trees (31%), has decreased or declined over the last ten years.

The City's Urban Forest Management Plan provides a community-recommended, City-adopted menu of actions and strategies serving as a road map to move towards a goal of a healthy, thriving 30% overall tree canopy coverage by 2030 by creating greater efficiencies in City operations, standardizing levels of service, and responding to the challenges of climate change as well as other environmental factors. The Plan is a management tool for City staff that is transparent to the public regarding the actions taken on behalf of the broader community. Working together, the City and our community can achieve the vision for Tacoma, ensuring this city remains a great place to live, work, and play well into the future.

The Climate Action Plan (CAP) from 2021 employed various methods to engage the community, including interviews, surveys, visioning workshops, and the establishment of the Environmental Justice Leaders Workgroup (EJ Leaders) and Climate Ambassadors. The community expressed a strong need for access to urban green spaces and forests where they could recreate, recharge, and mitigate climate impacts; this was especially important for BIPOC community members. Residents of Tacoma, particularly the youth, are concerned about the health and well-being of their communities and environment, with a desire to live in a healthy ecosystem free from pollution. To achieve the city's climate action goals, community engagement highlighted the necessity for a low-carbon, active transportation system. This would not only help reduce emissions but also improve the city's overall mobility and transportation objectives. When asked about their concerns regarding climate impacts, community members from all demographics mentioned issues related to air quality and access to fresh water. However, youth expressed particular concern about changes to ecosystem functions and the impact on wildlife. Overall, the CAP emphasizes the importance of an intersectional approach to climate action, addressing issues of public health, access to basic needs, and ecosystem function.

How does this chapter address key themes?

As part of an interconnected system of life, the health of Tacoma watersheds is foundational to the health of its communities. Healthy urban forests naturally filter and process water and air, in addition to mitigating heat and noise-related stress. The air quality affects the health of watersheds, and when polluted, it can increase the ingestion of toxins, incidence of infectious diseases, and prevalence of chronic diseases such as asthma. Time spent in green spaces also promotes physical and mental well-being, and access to healthy, natural green spaces can contribute to higher home and property values. However, to realize these benefits, development and future growth must consider Tacoma's natural systems. When development occurs without attention to the underlying natural conditions, such as building roads through habitat corridors, safety can be put at risk, and the city's environmental assets are degraded. (**Public Health and Safety**)

Extreme weather patterns related to climate change are expected to increase in the coming years, and studies show that the impacts of these hazards are inequitably distributed. The historical impacts of redlining have resulted in communities of color experiencing urban heat island effects, air pollution, localized flooding, and a lack of adequate access to natural and open spaces. Historically, Tacoma's communities of color have faced a disproportionate level of exposure to environmental factors that impact health and socioeconomic well-being due to the high levels of industrial activity concentrated in their neighborhoods. For instance, Interstate 5 runs through South


PUBLIC HEALTH


SAFETY


SUSTAINABILITY

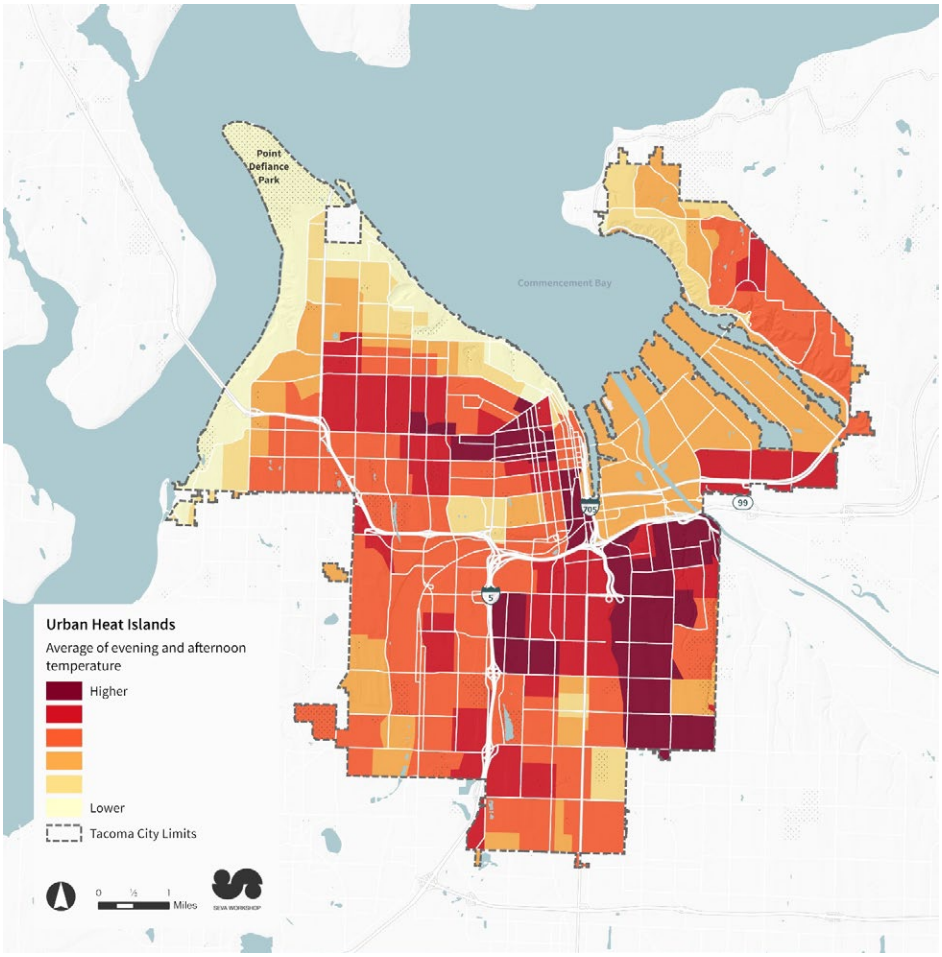

EQUITY


OPPORTUNITY

Tacoma, which has the highest percentage of BIPOC residents in the city, thereby contributing to poor air quality, along with various industrial activities concentrated in the area. As a result, over 10% of South Tacoma residents suffer from asthma. Tacoma's environmental assets play a key role in mitigating these stressors. Trees help cool environments by providing shade. Investing in green infrastructure and soil quality and protecting aquifer recharge areas ensures that ecosystem services continue functioning and managing flood risk. Future investments in ecological services should prioritize historically neglected communities to address past harms. The city is committed to restoring and enhancing natural areas to ensure all Tacomans can participate in and enjoy them. (**Sustainability and Equity**)

The One Tacoma Vision of compact neighborhoods with rich access to opportunities includes both built amenities and services, as well as elements of a natural environment and the benefits that it provides. Tacoma's shorelines, urban forests, waterways, and other natural areas are essential to this vision. Having access to and the ability to experience nature daily in these spaces is crucial for creating a safe, thriving community neighborhoods. (**Access to Opportunity**)

Exhibit 28. Urban Heat Island Map of Tacoma, 2020.



Sources: Earth Economics, 2020; Seva Workshop, 2024.

Environmental Element Terms and Definitions

"Biodiversity areas" are generally areas that contain habitat that is valuable to fish or wildlife and is mostly comprised of native vegetation.

"Biodiversity corridors" are areas of relatively undisturbed and unbroken tracts of vegetation that connect fish and wildlife habitat conservation areas, priority habitats, areas identified as biologically diverse or valuable habitats within a city or UGA.

"**Critical areas**" include the following areas and ecosystems: (a) Wetlands; (b) areas with a critical recharging effect on aquifers used for potable water; (c) fish and wildlife habitat conservation areas; (d) frequently flooded areas; and (e) geologically hazardous areas.

"Environmental assets" is used in this document to describe many important features of Tacoma's natural environment and ecosystem. This includes rivers, lakes, streams, and associated riparian uplands; floodplains; riparian corridors; wetlands and buffers; groundwater; trees and urban forests; bays, estuaries, and marshes; shorelines; open space lands; biodiversity areas and corridors; and priority species. Protecting and enhancing environmental assets is a focus for the policies included in this element.

"Floodplain" means the total area subject to inundation by the base flood, including the flood fringe and the floodway areas.

"Frequently flooded areas" are lands in the flood plain subject to at least a one percent or greater chance of flooding in any given year, or within areas subject to flooding due to high groundwater. These areas include, but are not limited to, streams, rivers, lakes, coastal areas, wetlands, and areas where high groundwater forms ponds on the ground surface. (WAC 365-190-030)

"Geologically hazardous areas" means areas that because of their susceptibility to erosion, sliding, earthquake, or other geological events,may not be suitable for the siting of commercial, residential, or industrial development consistent with public health or safety concerns.

"Natural areas" include such public or private areas of land or water which have retained their natural character, although not necessarily completely natural and undisturbed, or which are important in preserving rare or vanishing flora, fauna, geological, natural historical or similar features of scientific or educational value and which are acquired or voluntarily registered or dedicated by the owner under this chapter.

"Open spaces" are areas that provide important community space, habitat for plants and animals, and various recreational opportunities. They can be both active and passive spaces. Active open spaces include parks and trails whereas passive open

spaces include undeveloped lands, in their natural state, or vegetated areas such as wetlands, streams, and forests.

"Open space corridors" include lands useful for recreation, wildlife habitat, trails, and connection of critical areas. Connectivity is a key aspect of open space corridors. The connection between or expansion of lands to discourage habitat fragmentation helps protect and support biodiversity of plants, fish, and wildlife.

"Riparian habitat" means land adjacent to water bodies, as well as submerged land such as streambeds, which can provide functional habitat for salmonids and other fish and wildlife species. Riparian habitat includes, but is not limited to, shorelines and near-shore marine habitat, estuaries, lakes, wetlands, streams, and rivers.

Tacoma's **"urban forest"** is a collection of individual trees and plants that could be living in traditional landscape settings, forest remnants in parks, open spaces and private property. It encompasses the living components of the complex urban landscape and is an integral part of Tacoma's infrastructure. The urban forest influences and is influenced by the built environment that surrounds it. Tacoma's urban forest exists on different types of property that are managed differently depending on ownership (public vs. private), uses (commercial, residential, industrial, open spaces, etc.) and the vegetation present (invasive, native, climate-adapted). Properties where the urban forest can be found include City-owned property, and other publicly-owned property such as parks and schools.

"Urban and community forestry" or "urban forestry" means the planning, establishment, protection, care, and management of trees and associated plants individually, in small groups, or under more naturally forested conditions within cities, counties, and tribal lands.

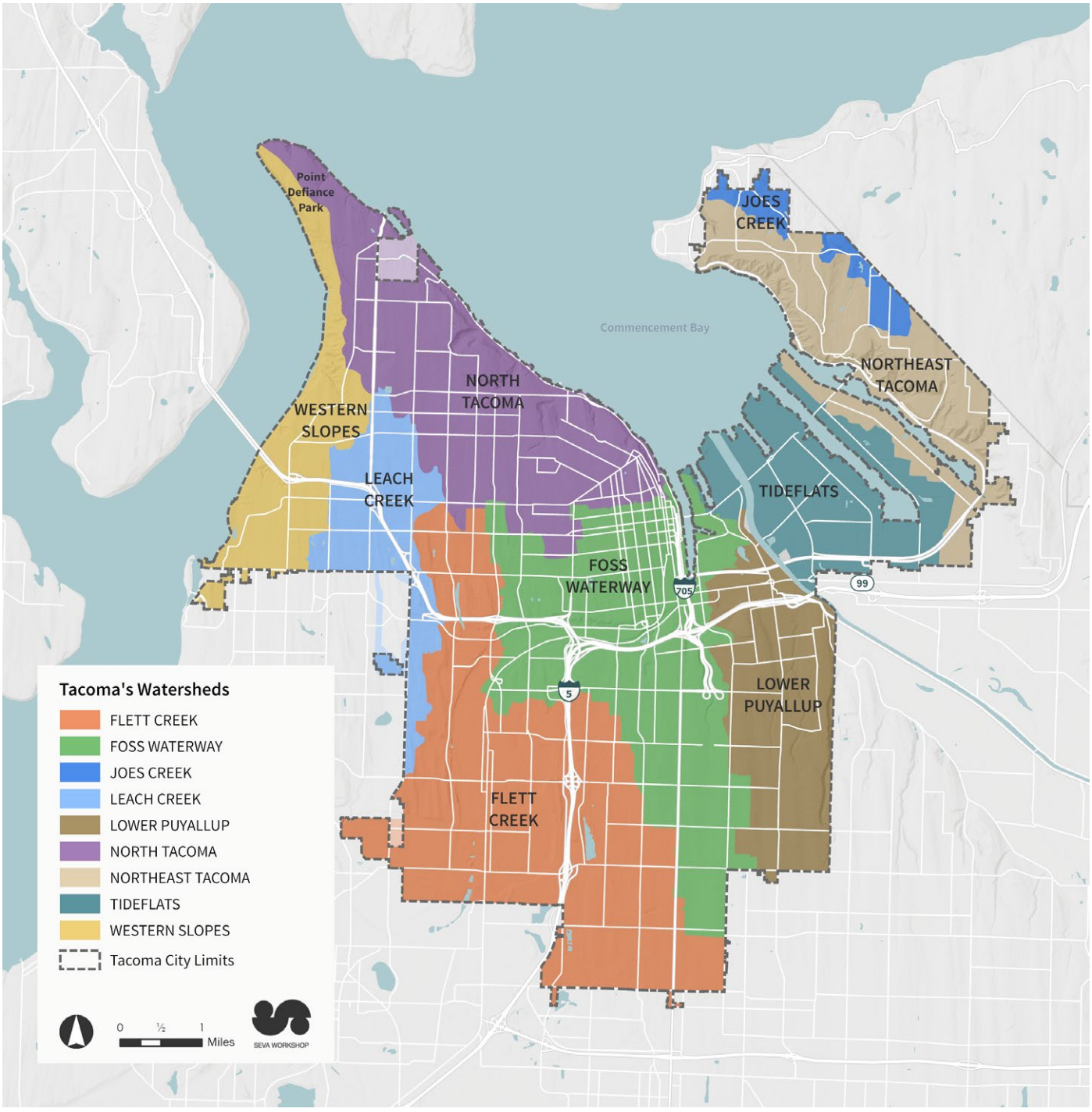
"Urban wildlife habitat" refers to lands that provide habitat important to wildlife in proximity to a metropolitan area.

"Wetlands" are areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas created to mitigate conversion of wetlands.

What are some baseline conditions and opportunities?

The Environment and Watershed Health element of the Comprehensive Plan approaches geography by watershed boundaries, rather than neighborhood districts. These nine areas are mapped in Exhibit 29.

Exhibit 29. Tacoma Watersheds Map.

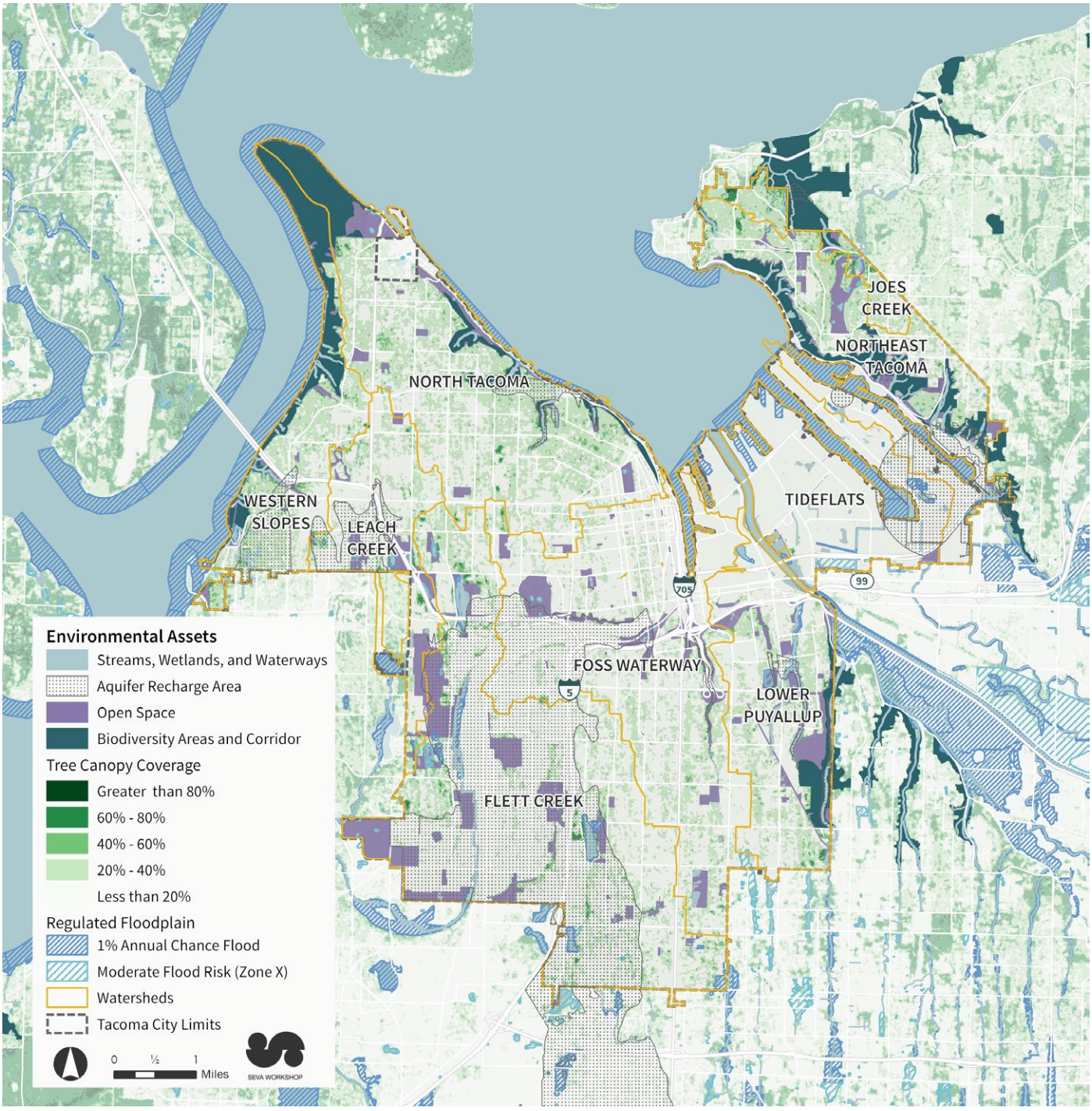


Sources: City of Tacoma Environmental Services Department; Seva Workshop, 2024.

Environmental assets exist in all of Tacoma's watersheds, which means communities within Tacoma experience the direct and indirect benefits offered by these assets. See Exhibit 30. Environmental assets include rivers, lakes, streams, and associated riparian uplands; floodplains; riparian corridors; wetlands and buffers; groundwater; trees and urban forests; bays, estuaries, and marshes; shorelines; open space lands; biodiversity areas and corridors; and priority species. Protecting and enhancing Tacoma's environmental assets today and in the future is increasingly important due to climate change impacts and the city's continued population growth. Historically, urbanization, growth, and development have negatively impacted the environment, which has, in turn, impacted the quality of life for many communities in Tacoma. According to Tacoma's Climate Adaption Strategy, climate change will increase year-round temperatures, extreme heat waves, diminished snowpack, rising sea levels, wildfire and smoke, and flooding from extreme precipitation and storm surges. Climate change will not only impact Tacoma's natural resources but there will also be social, health, economic, and infrastructural impacts. Climate change impacts will not equally impact communities within Tacoma; overburdened communities will experience these impacts first and more intensely.

With these challenges, Tacoma's commitment to proactively manage and preserve its natural resources will be critical for ensuring healthy and resilient communities in the future. Through the protection and enhancement of these environmental assets, Tacoma has the potential to improve environmental quality for the benefit of wildlife and communities, where not only are negative impacts corrected, but disparities in access can be improved. Coordinated stewardship in communities and neighborhoods across the city can help ensure tangible environmental, economic, and social benefits that all Tacomans can experience. Actions such as habitat restoration, increasing the city's tree canopy, and vegetation management can preserve parks and open spaces, provide additional access to natural areas, improve air and water quality, and help respond to climate change impacts like flooding and heat waves. As communities work together citywide to protect and enhance the environmental assets found within their respective neighborhoods, those actions will also lead to lasting impacts at the watershed level.

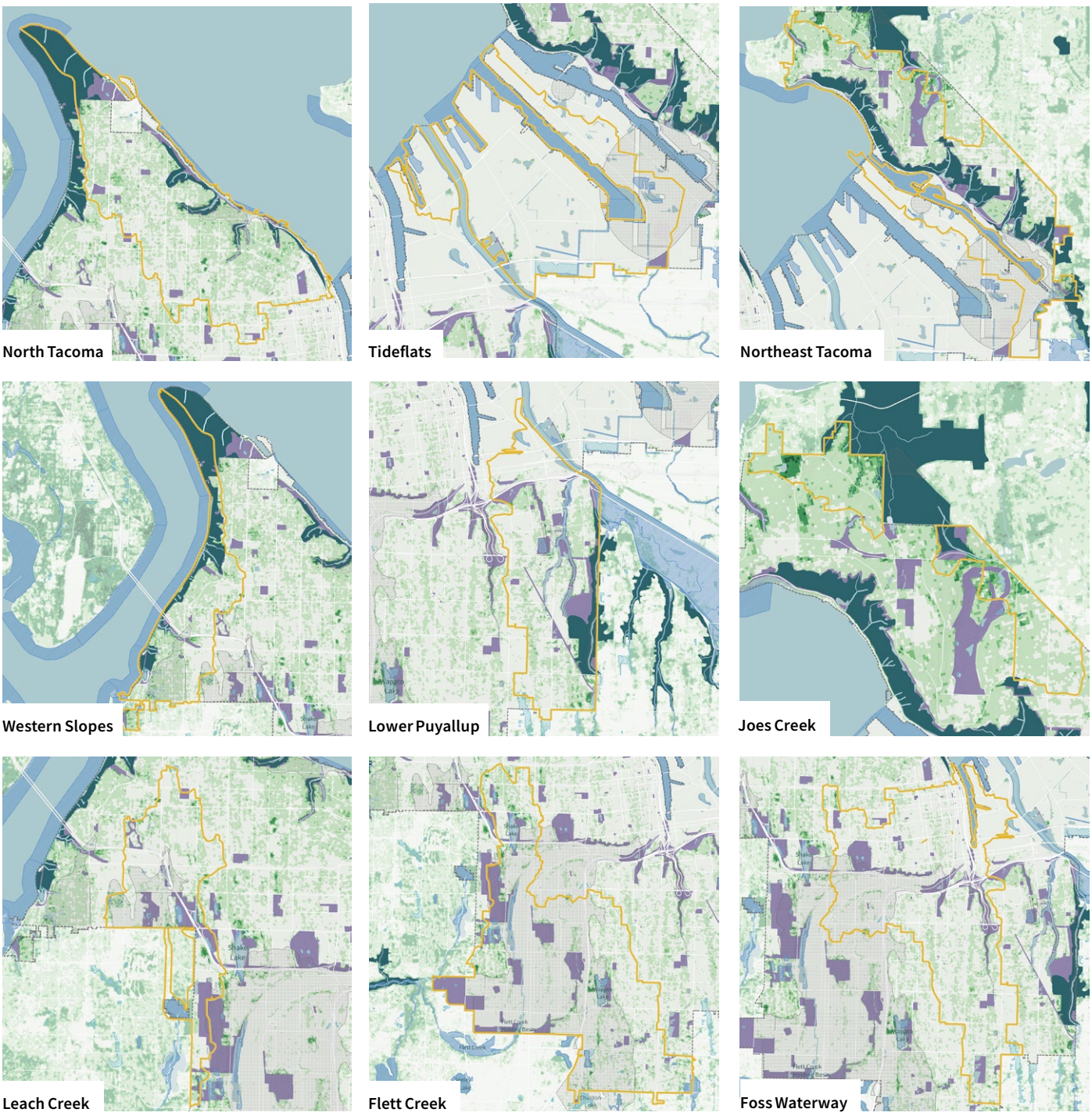
Exhibit 30. Tacoma Environmental Assets Map.



Note: The Streams, Wetlands, and Waterways layer includes information for the following assets: rivers, lakes, streams, riparian uplands and corridors, wetlands, bays, estuaries, and marshes.

Sources: City of Tacoma (Streams, Wetlands, and Waterways; Aquifer Recharge Areas; Open Space Corridors) 2024; Washington Department of Fish and Wildlife (Biodiversity Areas and Corridor), 2024; USDA Forest Service (Tree Canopy Coverage), 2021; Pierce County (Regulated Floodplain), 2017; Seva Workshop, 2024.

Exhibit 31. Environmental Assets within each watershed



4.2 Goals + Policies

Protect Tacoma's Environmental Assets

GOAL EN-1: All Tacomans, especially those in historically overburdened communities, have access to clean air and water, and can experience nature in their daily lives.

PRESERVING ECOSYSTEM SERVICES AND FUNCTIONS

Tacoma's environmental assets deliver important ecosystem services that contribute to the overall health and livelihoods of communities in the city. Ecosystem services include pollination, decomposition, water filtration, erosion and flood control, carbon storage, and climate regulation. Ecosystems are sustained through natural processes such as photosynthesis, nutrient cycling, and the water cycle. Activities to preserve these services and functions maintain the environment's ability to continue these services and natural processes.

Policy EN-1.1: Recognize and manage Tacoma's environmental assets as vital components of the City's infrastructure that provide multiple benefits, including, but not limited to, economic impacts, pollutant reduction potential, carbon sequestration, and the reduction of stormwater runoff, and provide a heightened level of livability and health benefits.

Policy EN-1.2: Ensure the City's natural resource inventory tracks the quantity, quality, accessibility, and function of high value environmental assets within each watershed to help inform environmental protection activities for the following:

- Rivers, lakes, streams and associated riparian uplands
- Floodplains
- Wetlands and buffers
- Groundwater
- Trees and urban forests
- Heritage trees, especially specific species of concern like native Garry Oak
- Bays, estuaries and marshes
- Shorelines
- Native and other vegetation species and communities that provide habitat value
- Habitat complexes and corridors, refugia, rare and declining habitats such as wetlands, and habitats that support special status or at-risk plant and wildlife species
- Other natural resources as identified

Policy EN-1.3: Establish measures to track net changes in habitat functions for the city's environmental assets, with special consideration for measuring the net change in historically overburdened communities.

Policy EN-1.4: Develop a prioritized list of focus areas and/or properties desirable for public acquisition to support long-term natural resource protection, coordinating acquisition with other programs to balance ecological preservation and protection with community development needs.

Policy EN-1.5: Where possible, ensure plans and investments improve habitat connectivity by preventing habitat fragmentation, preserving or creating habitat

areas, and enhancing the quality of Open Space Corridors, especially rare and declining habitat types and habitats that support at-risk plant and animal species and communities, such as, but not limited to, Garry Oaks and Camas prairies.

Policy EN-1.6: Encourage mitigation approaches when preservation is not feasible that maximize ecosystem benefits. Require on-site mitigation or use of the approved mitigation banks rather than off-site mitigation, unless off-site mitigation within the same watershed enhances effectiveness.

Policy EN-1.7: Assess and periodically review the best available science for managing critical areas and natural resources, while also incorporating traditional ecological knowledge and community experiences. Develop plans and regulations while considering Tacoma's obligation to meet urban-level densities under the Growth Management Act.

Policy EN-1.8: Require best management practices in the siting, design, planting, maintenance, and removal of trees and vegetation on public lands, including public rights of-way consistent with the City's adopted Urban Forest Manual, Design Manual, land use codes, and with a focus on preventing the spread of noxious weeds.

Policy EN-1.9: Seek to prevent human-induced native soil loss, erosion, contamination, or other impairments to soil quality and function.

Policy EN-1.10: Ensure that plans and investments maintain and improve watershed hydrology. Pollution reduction, impervious surface limitations, tree canopy expansion, and habitat restoration can improve water quality in rivers, streams, floodplains, wetlands and groundwater aquifers.

Policy EN-1.11: Protect the quality of groundwater used for public water supplies to ensure adequate sources of potable water for Tacoma and the region through consistent engagement and collaboration with the South Tacoma Groundwater Protection District. Ensure that the level of protection provided corresponds with the potential for contaminating the municipal water supply aquifer.

CONSERVING BIODIVERSITY

Biodiversity refers to the variety of plants, fish, and wildlife found within an ecosystem. An abundant and varied ecosystem indicates stability, resilience, and healthiness. Protecting the variety of species and habitats will ensure Tacoma's environmental assets can continue to provide ecosystem services.

Policy EN-1.12: Ensure community members have safe, inclusive, and well-designed physical and visual access to environmental assets by prioritizing infrastructure that provides accessible pathways, interpretive features, and amenities in underserved areas while also protecting high value natural resources, fish, wildlife, and culturally important landscapes.

Policy EN-1.13: Maintain self-sustaining populations of native plants, native resident and migratory fish and wildlife species, including at-risk species and beneficial organisms such as pollinators.

Policy EN-1.14: Retain mature, healthy trees, native vegetation, and forested areas on City-owned land and street rights-of-way and within designated Open Space Corridors. Prioritize the preservation of these natural assets during development projects and in discretionary land use decisions.

WHAT ARE CRITICAL AREAS?
Critical areas in Tacoma include marine habitats, freshwater rivers, streams and lakes, wetlands, aquifer recharge areas, frequently flooded areas, geologic hazardous areas, and fish and wildlife habitat conservation areas (FWHCA), which include biodiversity areas and corridors (BAC). To see if you live, work, or own a business near an identified critical area, see the City's Critical Areas Map at the end of this chapter or the dynamic map maintained on the City's website, at data.cityoftacoma.org.. The City regulates development in or near critical areas through their Critical Areas Ordinance.

Policy EN-1.15: Establish protections for heritage and/or threatened tree species from the impacts of urbanization. In all planning and development projects to support biodiversity, require special consideration for these tree species, such as Garry Oaks.

Policy EN-1.16: Encourage retention and use of native soils, minimizing soil compaction to foster tree health and plant growth and other soil life, including microbes, fungi, invertebrates, and other organisms essential for nutrient cycling, carbon storage, and overall soil health.

POLLUTION CONTROL AND REDUCTION

Pollution negatively impacts the environment and impedes the ability for an ecosystem to maintain its natural processes. Actively managing and minimizing the release of pollutants into the air, water, and soil can help protect Tacoma's environmental assets.

Policy EN-1.17: Identify and characterize all contaminated sites which adversely affect the City's shoreline areas, surface waters, groundwater and soils. Prioritize remediation and environmental restoration in overburdened communities.

Policy EN-1.18: Manage and treat the quality and quantity of stormwater runoff entering Tacoma waterbodies, to protect public health and safety, surface and groundwater quality, and the ecological functions of natural drainage systems.

Policy EN-1.19: Minimize and manage ambient light levels to protect the integrity of ecological systems and public health without compromising public safety within open spaces, habitat corridors, and environmentally critical areas.

Policy EN-1.20: Encourage the infiltration of stormwater to promote aquifer recharge and ensure a continuous supply while preventing further loss of groundwater.

Policy EN-1.21: Prevent groundwater contamination through performance criteria and guidelines for siting, design, construction and operation of commercial and industrial structures and activities.

Policy EN-1.22: Increase education and training on the use of integrated pest management plans to reduce the reliance on pesticides and chemical fertilizers and encourage more plant diversity.

Policy EN-1.23: Set local limits or buffer zones on the use of pesticides and chemical fertilizers near critical areas to reduce contamination.

Policy EN-1.24: Require all known available and reasonable methods of prevention control and treatment (AKART) as a condition to permitting construction to support the City's National Pollutant Discharge Elimination System Phase I Municipal Stormwater (NPDES) Permit compliance.

CLIMATE CHANGE MITIGATION AND ADAPTATION

Climate change is impacting the services that ecosystems provide by altering the distribution and quantity of species and disrupting natural processes. Protecting Tacoma's environmental assets means helping ecosystems adapt to or minimize climate change impacts.

Policy EN-1.25: Incorporate climate data and known climate impacts and risks into all stages. Consider the impacts of climate change and the risks to the city's

Climate change is resulting in increased temperatures and days with extreme heat. The impact of these changes is not evenly distributed, as certain neighborhoods experience higher temperatures than others. This map demonstrates how certain communities are overburdened by the urban heat island effect and, as a result, policies must respond to ensure mitigation measures are prioritized in the areas with the most need. Temperatures reflected on this map represents the average afternoon and evening temperatures on a single in Tacoma in 2018.

environmental assets in all phases of planning, programming and investing to protect Tacoma's environmental assets.

Policy EN-1.26: Maintain, implement and periodically update the climate action plan and greenhouse gas inventory, and adjust greenhouse gas emission targets accordingly to ensure successful implementation and consistency with regional and state goals.

Policy EN-1.27: Engage frontline communities in co-creating climate adaptation plans, leveraging lived experiences to shape solutions that address disproportionate vulnerabilities. Provide resources, training, and compensation to community members participating in this process.

Policy EN-1.28: Collaborate with workforce development programs to train workers in renewable energy and green infrastructure sectors, with an emphasis on hiring communities historically excluded from economic opportunities. Establish local procurement targets for clean energy projects.

Policy EN-1.29: Reduce greenhouse gas emissions from City operations and practices, setting an example for private operations to follow.

SUSTAINABLE LAND USE AND DEVELOPMENT

As Tacoma continues to grow and develop, it is critical to plan and design in a way that minimizes negative impacts to the environment and Tacoma's environmental assets. Sustainable land use and development can meet the needs of growing communities and ensure communities have access to the benefits of Tacoma's natural resources.

Policy EN-1.30: Restrict development on critical areas and important environmental assets where such development would pose hazards to life, property, or infrastructure or where critical ecological functions or environmental quality would be adversely affected:

- Floodways and 100-year floodplains
- Geologic hazard areas
- Wetlands
- Streams
- Fish and wildlife habitat conservation areas
- Aquifer recharge areas
- Shorelines
- Significant or heritage trees

Policy EN-1.31: Mitigate the potential adverse impacts of proposed development on Tacoma's environmental assets, their functions, and the ecosystem services they provide.

Policy EN-1.32: Require development projects to prioritize site design and construction techniques that avoid and minimize adverse impacts on Tacoma's natural resources, critical areas and shorelines. Ensure projects incorporate practices to protect wildlife by providing safe fish and wildlife passage.

Policy EN-1.33: Limit impervious surfaces, especially within open Space Corridors, shorelines, and designated critical areas, to reduce impacts on hydrologic function, air and water quality, habitat connectivity, and tree canopy.

Policy EN-1.34: Enhance compact and livable neighborhoods by instituting smart growth principles while increasing tree canopy and open space.

CLIMATE ACTION AND SOCIAL JUSTICE. Tacoma's CAP clearly illustrates the connections between historic inequities that overexpose minority, low-income, tribal, or indigenous communities to environmental harms and risks to the greater vulnerabilities these communities have to climate change hazards. For example, these communities may be in neighborhoods with limited street trees and vegetation, which increases their exposure to urban heat island effect and air pollution. Additionally, underinvestment in infrastructure in these communities could lead to challenges in managing stormwater runoff and flooding.

Policy EN-1.35: Develop anti-displacement strategies alongside climate resilience projects to ensure low-income residents and small businesses benefit from improved environmental quality without being priced out of their communities.

Policy EN-1.36: Encourage energy-efficient buildings and installation of renewable energy sources and technologies.

Policy EN-1.37: Protect habitat improvement project sites and cleanup sites in perpetuity.

Policy EN-1.38: Reuse and reclaim water intended for irrigation and other non-potable water needs.

Policy EN-1.39: Retain as many mature trees as practicable and appropriate during the development of City owned land and street rights-of-way.

Policy EN-1.40: Discourage removal of safe, healthy, and appropriate trees located on City property or within rights-of-way.

URBAN FOREST AND TREE CANOPY

GOAL EN-2: Tacoma's Urban Forest is healthy and expansive.

Policy EN-2.1: Resource and implement the Council-adopted Urban Forest Management Plan (UFMP), prioritizing actions that have the most significant impacts on environmental justice and tree equity.

Policy EN-2.2: Achieve the citywide tree canopy goal, which aims to have all Tacoma neighborhoods have a minimum tree canopy cover of 30% by 2050.

Policy EN-2.3: Support the preservation of large healthy trees, native trees and vegetation, tree groves, and forested areas as an element of discretionary land use reviews.

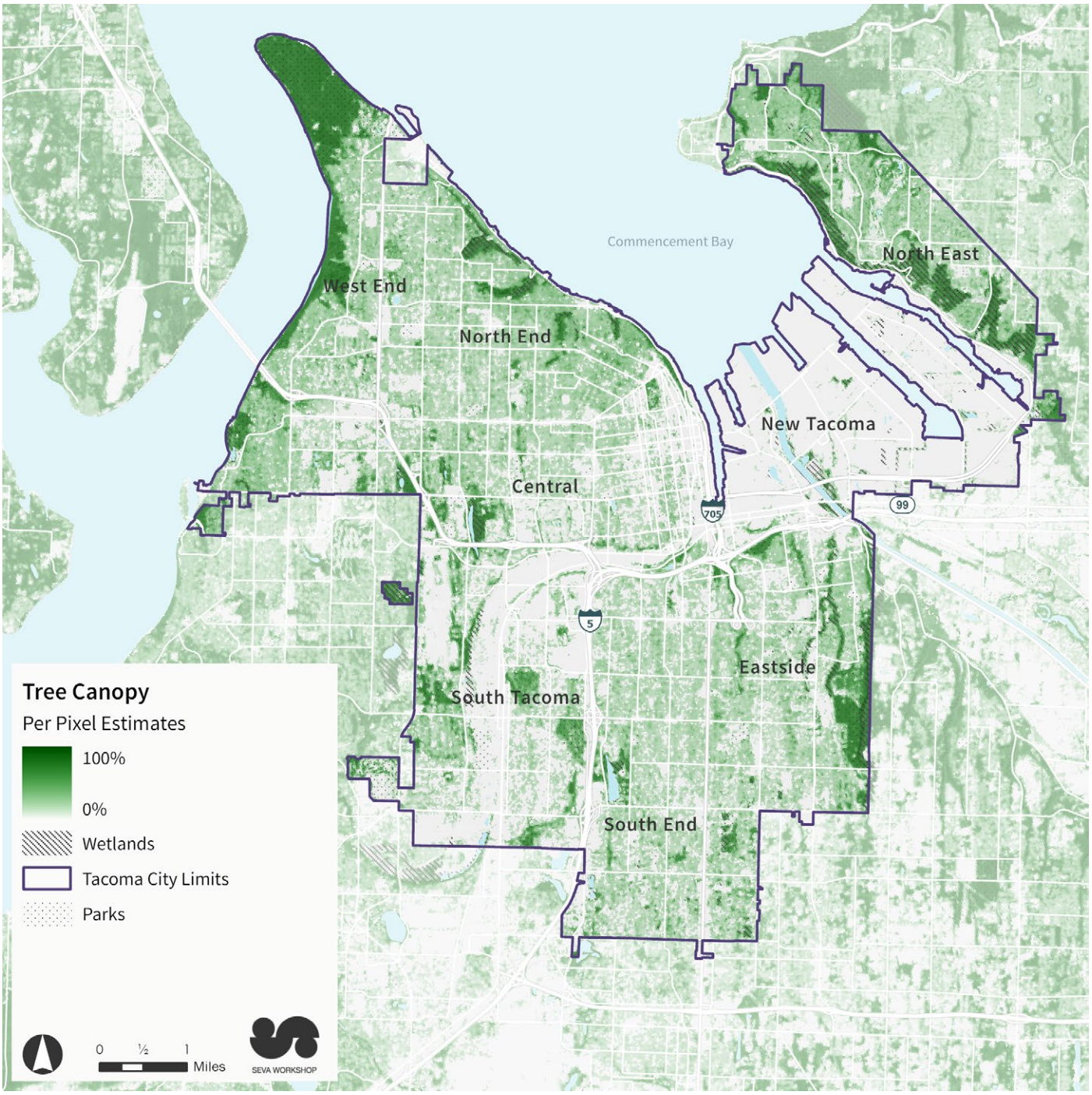
Policy EN-2.4: Improve tree species diversity and age diversity.

Policy EN-2.5: Invest in tree planting and maintenance, especially in low canopy areas, neighborhoods with underserved or overburdened communities, and within and near Open Space Corridors. Identify and address hazardous trees for proper end-of-life/removal and establish tree debris management, wood utilization, and wood waste diversion protocols.

Policy EN-2.6: Identify priority areas for tree preservation and planting in the development of subarea, neighborhood, and watershed plans, especially trees of historic merit or heritage trees

Policy EN-2.7: Increase public education on the value of Tacoma's urban forest to better support environmental stewardship among community members. Public education should focus on the relationships between Tacoma's urban forest, community health, and watershed health.

Exhibit 32. Tacoma Tree Canopy Coverage.



Sources: USDA Forest Service, 2021; Seva Workshop, 2024..

Policy EN-2.8: Continue to leverage partnerships with the Tree City USA program, Washington State Department of Commerce, and the Department of Natural Resources Urban and Community Forest Program. Prioritize outreach and engagement in overburdened communities.

Policy EN-2.9: Educate property owners on selecting species appropriate for site-specific conditions and supporting wildlife habitat, and about pests and disease susceptibility. Encourage property owners to use climate-adapted species to support climate resiliency.

Policy EN-2.10: Continue to update City standards and specifications to be consistent with industry BMPs for tree health and to encourage "right tree right place" standards to avoid conflicts with essential infrastructure. Align updates to City standards and code to support tree protections with the objective of no net losses to Tacoma's urban forest.

Policy EN-2.11: Develop a long-term pest and disease readiness plan for Tacoma's urban forest.

Policy EN-2.12: Utilize the Tree Risk Management Plan and Trees and Sidewalks Operations Plan to mitigate public hazards and inform routine inventories and maintenance schedules of street trees within the right of way.

Policy EN-2.13: Provide additional guidance on post-planting tree care and maintenance through increased public education and engagement with local arborist communities.

"A HEALTHY, THRIVING, AND SUSTAINABLE URBAN FOREST IS A COMMUNITY PRIORITY, TO BE THOUGHTFULLY MANAGED AND CARED FOR BY PARTNERSHIPS BETWEEN THE CITY AND ITS RESIDENTS TO MAXIMIZE PUBLIC SAFETY AND BENEFITS THAT INCLUDE A THRIVING ECOSYSTEM, VIBRANT ECONOMY, AND LIVABLE COMMUNITIES SHARED BY ALL TACOMANS"

ONE TACOMA URBAN FOREST MANAGEMENT PLAN

Improve Environmental Quality

GOAL EN-3: Net gains in environmental health are experienced by all Tacomans, especially those located in historically overburdened communities.

STEWARDSHIP AND COORDINATED MANAGEMENT

Protecting, maintaining, and improving Tacoma's environmental assets is no small task and requires shared leadership, knowledge, resources, and commitment. Working together with partners and communities creates opportunities for inclusive decision making and equitable access to environmental benefits.

Policy EN-3.1: Collaborate with federal, state, regional, local agencies, and community members to manage the City's environmental assets and enhance watershed health through coordinated planning and investments to maximize environmental benefits.

Policy EN-3.2: Coordinate transportation and stormwater system planning in areas with unimproved or substandard rights of way to improve water quality, prevent localized flooding, and enhance pedestrian safety and neighborhood livability.

Policy EN-3.3: Work with partners and community-based organizations to identify strategies for expanding existing stewardship programs to further involve community members in enhancing watershed health and habitat functions.

Policy EN-3.4: Where possible, manage areas of cultural and environmental importance with the Puyallup Tribe of Indians.

Policy EN-3.5: Coordinate with state and federal public agencies and Tribal governments when reviewing permits to ensure streamlined permit review and avoid redundant regulatory requirements.

Policy EN-3.6: Streamline internal systems for efficient response to questions that arise during permitting, development, or environmental review processes.

HABITAT RESTORATION

Urbanization and development have negatively impacted Tacoma's environmental assets. Correcting these harms involve repairing and enhancing degraded ecosystems to their restored natural states. Engaging in habitat restoration ensures that ecosystems can thrive and continue to provide benefits.

Policy EN-3.7: Restore surface waters that have become degraded to provide for fish, wildlife, plants, and recreational opportunities.

Policy EN-3.8: Prioritize restoration of degraded areas along wetlands, rivers, streams, lakes, and marine shorelines in the identified priority watersheds. Restoration activities should include planting native vegetation, developing a canopy management plan, increasing the tree canopy, removing noxious weeds, soil remediation, and erosion control.

Policy EN-3.9: Reconnect shorelines, upland areas, and water courses through habitat conservation and restoration efforts, property acquisition, and/or easements.

MOVING FROM NO NET LOSS TO NET GAINS. Through WAC 365-196-830, protections for critical areas should ensure that there are no net losses in the ecological functions and services provided by critical areas. The City recognizes the importance of maintenance and preservation of Tacoma's environmental assets, but strives to enhance the ecological functions and services these assets provide to communities across the city. Striving for net gains would move actions beyond simply mitigating negative impacts or stressors that can be detrimental to critical areas and other natural resources. Actions that support net gains include habitat restoration and species reintroduction.

Policy EN-3.10: Ensure buffer zones around restored habitats are maintained and monitored to protect environmental quality improvements from surrounding development impacts and potential encroachment.

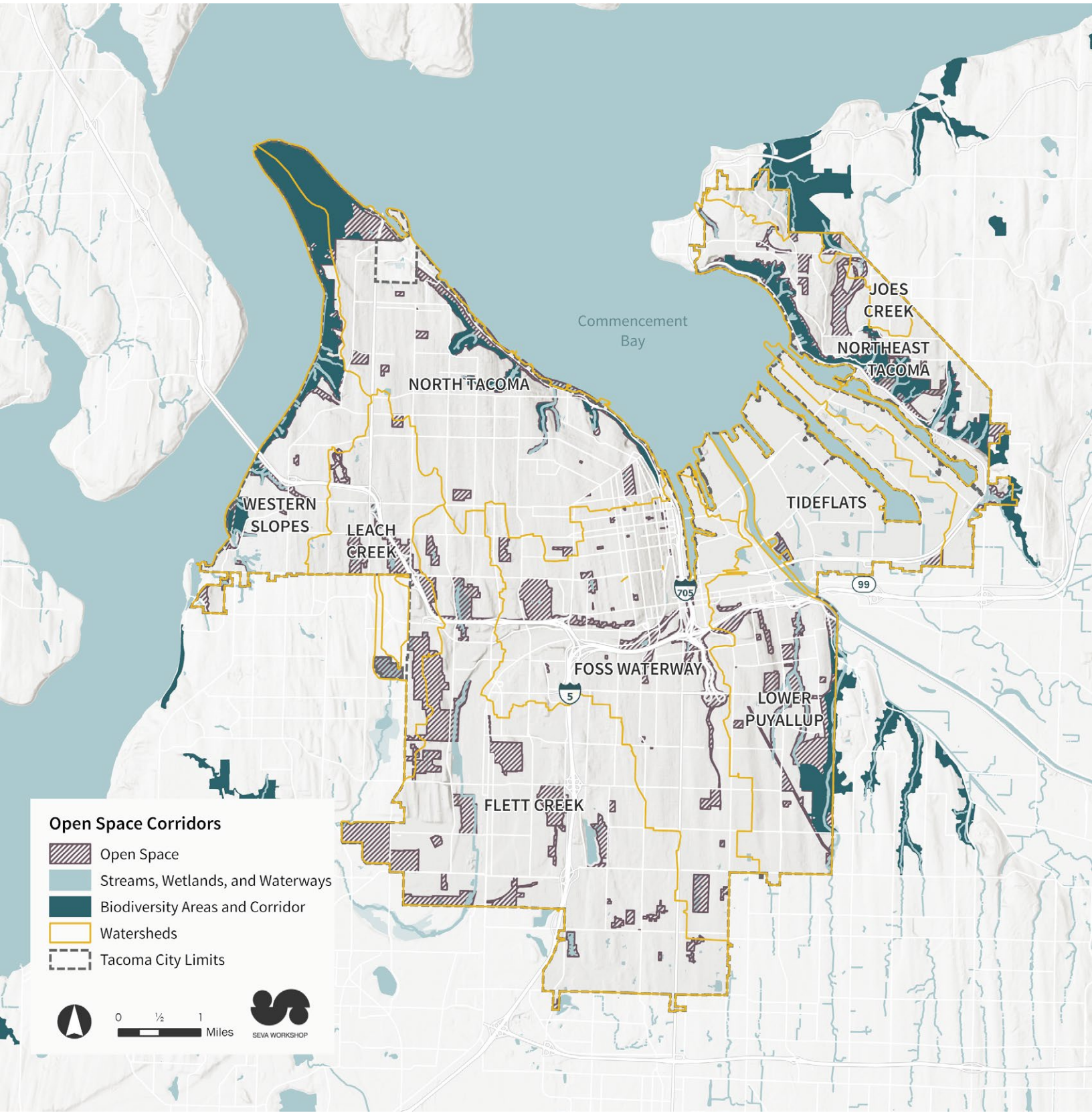
Policy EN-3.11: Prioritize climate-adaptive practices, such as reintroduction of native species, when engaging in habitat restoration.

Policy EN-3.12: Where possible, remove invasive and aggressive species, such as knot weed and blackberries.

HABITAT CONNECTIVITY AND OPEN SPACE CORRIDORS

Habitat connectivity refers to the ability for wildlife to safely move between habitats. Open space corridors play a crucial role in promoting connectivity. Since connected networks of lands are better suited to support biodiversity and ecological functions, working to expand habitats and corridors help to protect and enhance Tacoma's environmental assets.

Exhibit 33. Open Space Corridors in Tacoma.



Sources: City of Tacoma, 2024; Seva Workshop, 2023.

Policy EN-3.13: In open space acquisition, place the highest priority on acquiring properties with the following characteristics (in order of importance):

1. A high degree of habitat health and quality, location within identified Open Space Corridors, presence of threatened or endangered species or habitats, and presence of wetlands.
2. The site's habitat potential, offered sale prices, and manageability issues.
3. The site's proximity to other protected sites, the presence of a volunteer restoration group, whether the site serves one or more valuable open space functions in addition to providing habitat, whether conservation of the site would support habitat health within or near a designated wetland or stream of local significance, and whether the site is within an area underserved by open space.
4. The site would aid in habitat restoration or contribute to the expansion of identified wildlife corridors or connects existing lands together to create corridors.

Policy EN-3.14: Improve public access provisions to Open Space Corridors that does not negatively disrupt fish, wildlife and plants by leveraging stewardship and environmental education initiatives that focus on increasing access to youth, BIPOC communities, and low-income community members. Provisions can include traditional harvesting of plants, animals, and minerals to support Indigenous cultural and medicinal practices.

Policy EN-3.15: Target habitat-related resources and programs within the designated Open Space Corridors as depicted on the Open Space Corridors Map (see Exhibit 33) by prioritizing areas with the greatest potential to reach their target habitat community and condition.

Policy EN-3.16: Identify potential regulatory approaches to providing greater protection for the habitat functions of habitat lands located within the designated open space corridors.

Policy EN-3.17: Utilize dedicated funds generated through stormwater rates to conserve, restore, and manage the City's natural Open Space Inventory, pursuant to achieving stormwater management goals. Supporting tree planting programs and planting along public rights-of-way and other public properties can also help meet stormwater management objectives.

Policy EN-3.18: Utilize the City's Transfer of Development Rights Program (TDR) to conserve valuable city and regional assets and continue to develop and enhance the program. Lands meeting the City's criteria for conservation, which are located within the designated Open Space Corridors, and lands achieving other open space goals of this Plan are appropriate "sending areas" for TDR to other locations in the city, county, and region.

Policy EN-3.19: Implement Landscape Conservation and Local Infrastructure Program, a state authorized policy tool combining transfer of development rights with tax increment financing, to bring resources to bear that can support Tacoma's conservation goals.

Policy EN-3.20: Promote incentive-based approaches to conserve designated Open Space Corridors, such as the use of the Open Space Current Use Assessment and Pierce County Conservation Futures program.

Policy EN-3.21: Enhance native vegetation along wetlands, rivers, streams, and lakes. When possible, require new planting of native vegetation and/or removal of noxious weeds to restore ecological functions of riparian buffers where such activities will enhance the corridor's function.

Policy EN-3.22: Consider goals and policies regarding habitat connectivity in all decisions regarding street vacation requests and disposition of surplus City properties.

Policy EN-3.23: Require the use of native vegetation in landscaping where directly adjacent to Biodiversity Areas and Corridors. Recommend the use of native and/or climate-adapted vegetation in landscaping in all other areas.

Policy EN-3.24: Utilize alternative mechanisms for preventing and reducing groundwater contamination.

Policy EN-3.25: Create and maintain wildlife corridors for movement and use by species. These areas should use native plants that support native wildlife.

WATER + AIR QUALITY

Clean water and air are essential for healthy communities. Tacoma's growth and development has impacted water and air quality over time. Surrounding water bodies have become polluted and the release of chemicals and gases into the atmosphere harms people's health and negatively impacts the natural processes of ecosystems. Continued development will prose an ongoing challenge to ensure communities in Tacoma have access to clean water and air.

Policy EN-3.26: Encourage use of low-impact development, habitat-friendly development, and green infrastructure, both for existing private development and for City-owned, managed or funded infrastructure.

Policy EN-3.27: In the identified priority watersheds, collaborate with community members to co-design stormwater projects that align with community needs while enhancing access to environmental benefits.

Policy EN-3.28: Acquire property for the purpose of planting trees to mitigate stormwater runoff impacts caused by development.

WHAT IS LOW IMPACT DEVELOPMENT? Low impact development is a stormwater and land use management strategy that strives to mimic pre-disturbance hydrologic processes by emphasizing conservation, use of on-site natural features, site planning, and distributed stormwater management practices that are integrated into a project design. Low impact development best management practices emphasize pre-disturbance hydrologic process of infiltration, filtration, storage, evaporation and transpiration. Common low impact development best management practices include: bioretention, rain gardens, permeable pavements, minimal excavation foundations, dispersion, soil quality, vegetated roofs and rainwater harvesting.

Policy EN–3.29: Map tree canopy to support stormwater management and air quality on City-owned and operated properties and develop and follow a methodology to intentionally identify canopy for stormwater management and air quality purposes, which may be updated annually or as needed.

Policy EN–3.30: Map overburdened communities in relation to stormwater treatment and flow control BMPs/facilities, outfalls, discharge points, air pollution levels, and tree canopy on City-owned and operated properties.

Policy EN–3.31: Adopt and implement tree canopy goals and policies to support stormwater management and air quality improvements. Consider how existing or future tree canopies can support stormwater management, water quality improvements in receiving waters, and air quality readings.

Policy EN–3.32: Establish a long-term (5 and 10 year) goal for the tree canopy, to be used for stormwater management and air quality improvement. Specific considerations related to the canopy on City-owned and operated lands shall include maintaining or increasing canopy in overburdened communities and maintaining existing mature canopy.

Policy EN–3.33: Ensure that SEPA mitigation measures evaluate and respond to both indoor and outdoor air quality impacts for new development.

Policy EN–3.34: Work with City partners and community members to identify opportunities for the removal and replacement of impervious surfaces in public right of way and on private property as an effort to restore habitat, manage stormwater runoff, and increase access to vegetated landscapes.

Manage Environmental and Climate Hazards

GOAL EN–4: Tacoma is a resilient and safe city, with protections in place for communities and properties most at risk from climate events and natural hazards.

GEOLOGICAL HAZARDS

Policy EN–4.1: Geological hazards are natural events such as landslides, earthquakes, and soil erosion that pose risks to life, property, and infrastructure. These events can also destroy habitats and displace species. Understanding and planning for geological hazards helps to minimize the risks and strengthens a community's ability to respond and recover from natural disasters.

Policy EN–4.2: Minimize the risk of damage to life and property by establishing robust development standards that ensure avoidance and/or minimization of potential geologic hazards.

Policy EN–4.3: Require appropriate levels of study, technical analysis, and best available science as a condition to permitting construction within geologically hazardous areas, ensure sound engineering principles are used based on the associated risk in these areas and limit land uses within or near geologically hazardous areas.

Policy EN–4.4: Employ special building design, construction, maintenance and operational measures and critical area regulations to minimize the risk of structural damage, fire and injury to occupants, impacts to natural resources and to prevent post-seismic collapse in areas with severe seismic hazards.

Policy EN–4.5: Require site-specific seismic hazard preparedness studies for essential public facilities and services that are vital to the health and safety of the community (such as power lines, water lines, roads and communication channels).

Policy EN–4.6: Promote soil stability by requiring the retention or protection of trees and existing native vegetation in erosion-prone areas, as well as the establishment, restoration, and enhancement of native vegetation within geo-buffers and on geologically hazardous slopes, and by increasing the use of native soils.

Policy EN–4.7: Protect existing natural gulches, watercourses, ravines and similar land features from the adverse erosional effects of increased storm water runoff that is generated by new development, consistent with the Stormwater Management Manual.

Policy EN–4.8: Require minimum setbacks around the perimeter of site-specific landslide hazard areas and additional setbacks as determined through review by a Geotechnical Engineer to avoid the potential to undermine these areas, cause erosion and sedimentation problems to downstream or downhill land uses, and avoid the risk to human life and safety. Establish broader setbacks in areas at risk for mass wasting.

Exhibit 34. Tacoma Environmental Hazards Map.

Sources: City of Tacoma (Landslides and Erosion Hazards; Flood Hazard Areas; Liquefaction Susceptibility) 2024; Seva Workshop, 2024.

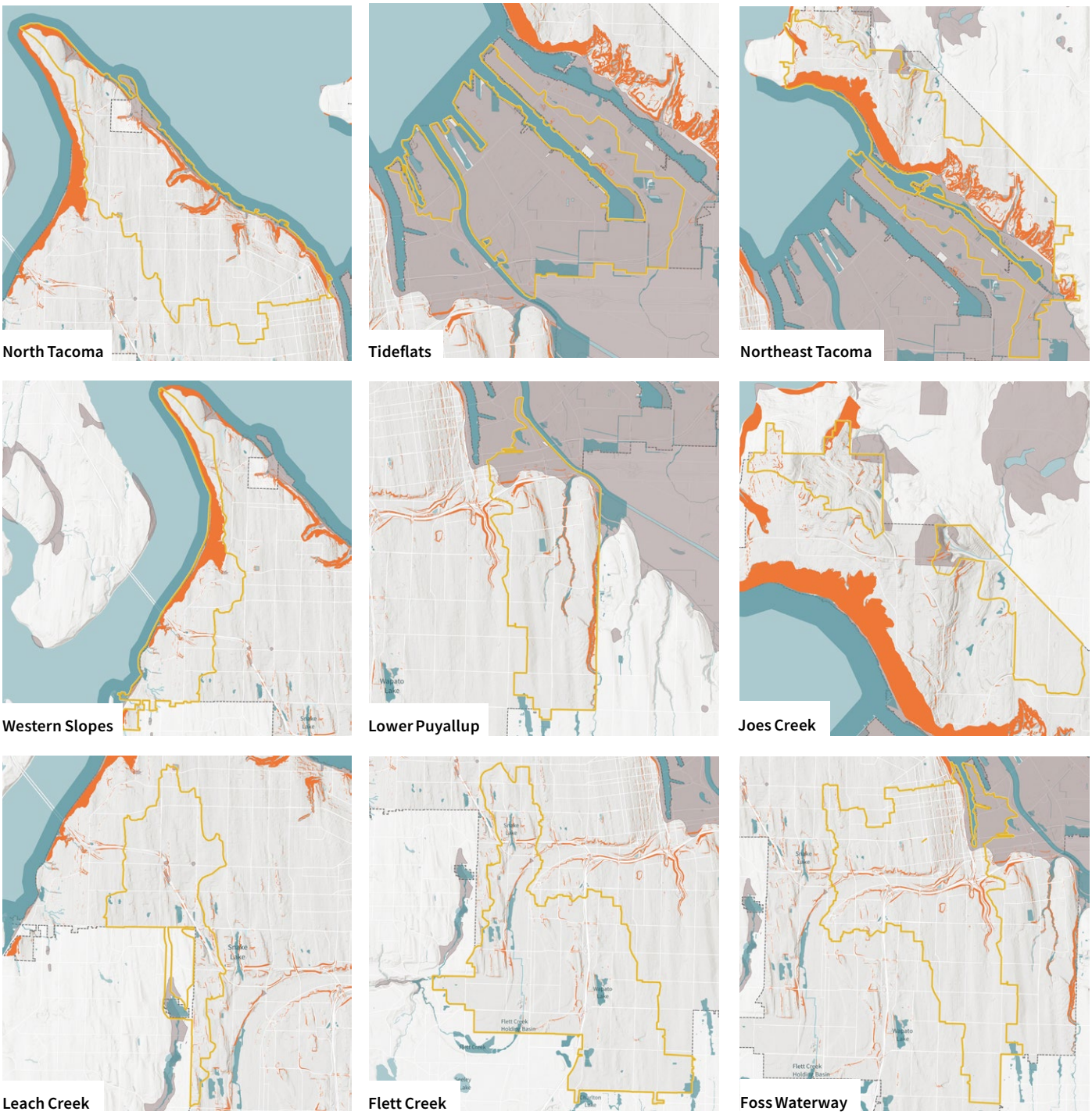


Exhibit 35. Environmental Hazards withing each watershed

WHAT ARE THE CLIMATE CHANGE RISKS TACOMA COULD FACE?

Several recent studies have concluded that rising levels of greenhouse gases in the atmosphere (e.g., carbon dioxide, methane, and nitrous oxide) have warmed the earth. These studies also conclude that increases in greenhouse gases are causing rising sea levels; melting snow and ice; and more extreme storms, rainfall, and floods. Changes in temperature and precipitation patterns are projected to have wide-ranging impacts on the Puget Sound region in the coming decades.

Anticipated climate change impacts in Tacoma include more extreme precipitation events (i.e., wetter winters and drier summers), an increased risk of mudslides, and greater flood risk in the Green and Puyallup Rivers (Dalton et al. 2014, Snover et al. 2013). Meanwhile, changing amounts and timing of streamflow due to glacial retreat, reduced snowpack, and earlier snowmelt in the Cascades could affect Tacoma's municipal water supply. Sea level rise and storm surge may result in greater coastal flooding, erosion and destabilization of shoreline bluffs.

An anticipated 4.3-to-2.8-degree Fahrenheit increase in average temperature by mid-century will be accompanied by more frequent and prolonged summer heat events, contributing to increased wildfire risk as well as increased building cooling costs, and posing risks to the health of elderly residents and other particularly vulnerable individuals (Mote et al. 2013).

FLOOD HAZARDS

Flood hazards occur when intense rainfall or storm surges inundate low-laying areas. Flooding can damage property and infrastructure and pose a public health risk to communities. Planning for and adapting infrastructure to address flooding will help mitigate damage and protect communities.

Policy EN–4.9: Regulate development in the 1% annual chance floodplain to avoid substantial risk and damage to life, public and private property, infrastructure, and fish and wildlife habitat. Ensure these regulations, as a minimum, comply with state and federal requirements for floodplain regulations. The map in Exhibit 30 identifies these areas.

Policy EN–4.10: Direct uses that require substantial improvements or structures away from areas within the 1% annual chance floodplain.

Policy EN–4.11: Require compensatory floodplain storage for all projects constructed within the 1% annual chance floodplain.

Policy EN–4.12: Prohibit locating essential public facilities or services, such as hospitals and schools, within the 0.2% annual chance floodplain.

Policy EN–4.13: Coordinate and work with community-based organizations, institutions, and other governmental agencies to ensure that plans and investments are consistent with, and advance, efforts to improve air quality and reduce exposure to air toxics, criteria pollutants and urban heat island effects. Consider air quality related health impacts on all Tacomans.

URBAN HEAT

Addressing urban heat requires targeted policies and collaborative efforts across various sectors. Strategies to increase vegetation and shade, use of specific materials to cool roofs and pavements as well as programs and facilities to strengthen heat resilience are needed. Heat mitigation and adaptation strategies can also improve air quality, however, air quality improvements will need more specific policies as well.

Policy EN–4.14: Establish monitoring system to track urban heat island across Tacoma to identify existing environmental conditions and assist with establishing reduction metrics.

Policy EN–4.15: Encourage planting shade-providing trees in neighborhoods with high exposure to urban heat island effects and air pollution. See map in Exhibit 36 for PM 4.5 particulate measurements across Tacoma.

Policy EN–4.16: Encourage new development to incorporate cooling features such as green roofs, cool roofs, and on-site tree and vegetation preservation and expansion to reduce heat absorption and improve local air quality. Support the goal of no net loss of the City tree canopy.

Policy EN–4.17: Designate and prepare public facilities to serve as Resilience Hubs by upgrading buildings with air conditioning and air filtration systems. Ensure these facilities are accessible to heat-vulnerable communities by increasing hours of operation and locating facilities near transit.

Policy EN–4.18: Partner with community organizations to distribute supplies such as portable fans and water bottles during heat waves. Prioritize outreach in communities with the highest risk and exposure to heat.

AIR POLLUTION

Tacoma has implemented several policies and initiatives to improve air quality, focusing on monitoring, regulation, and collaboration. The policies below are intended to support these efforts and identify additional ways to improve the city's air quality.

Policy EN–4.19: Avoid locating new facilities serving sensitive populations, such as schools or hospitals, within 500 to 600 feet of sources of pollution (e.g., Interstate-5, Interstate-705, State Route-509, State Route-16, State-Route 7, truck routes, rail yards, manufacturing/industrial centers) and vice versa. When new facilities are located in proximity to sources of air pollution, use building design, construction and technology to mitigate the negative effects of air pollution on indoor air quality.

Policy EN–4.20: Partner with community organizations to distribute supplies such as N95 masks and air purifiers during wildfire season and portable fans and water bottles during heat waves. Prioritize outreach in communities with the highest risk and exposure to heat and air pollution.

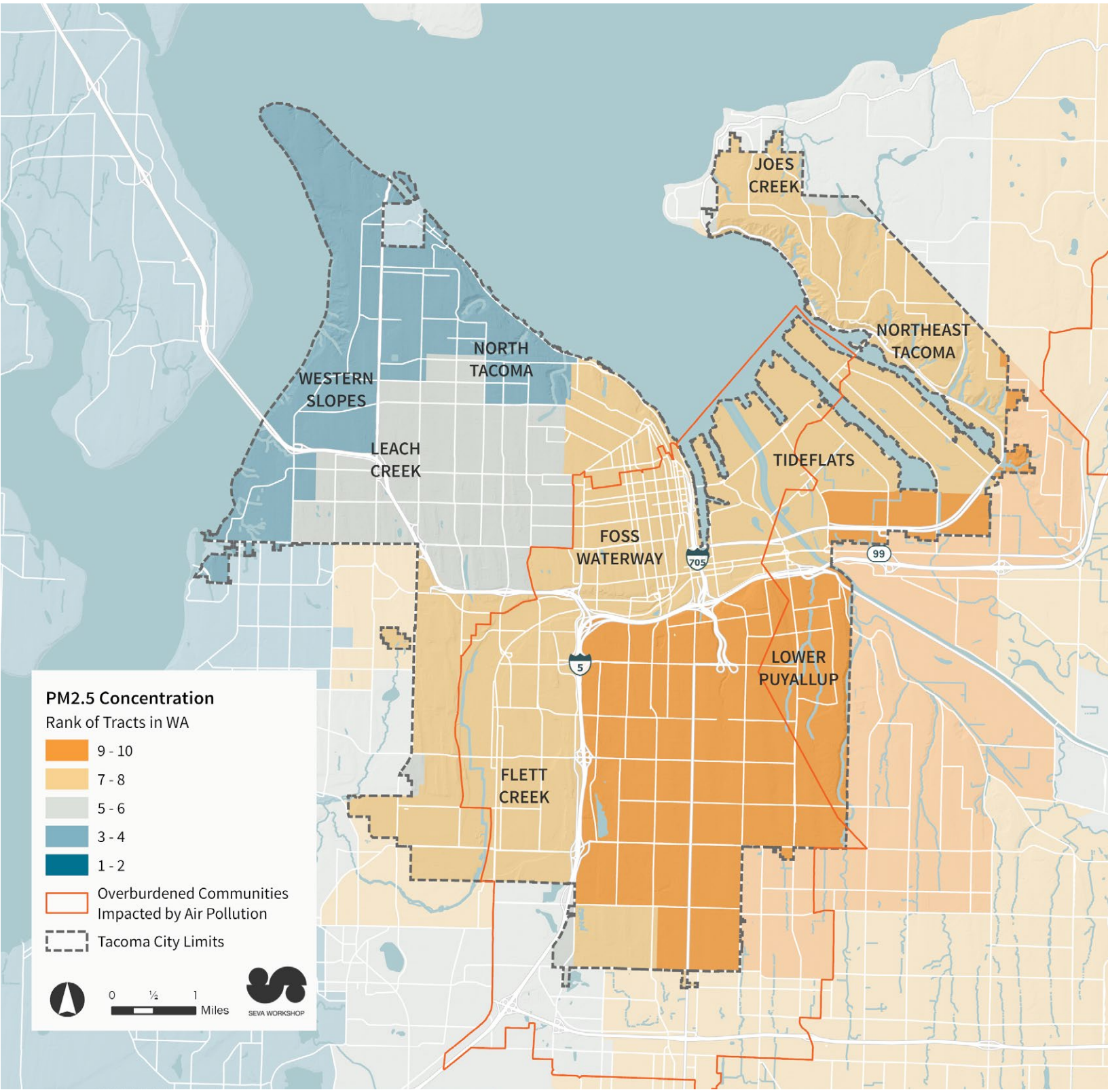
Policy EN–4.21: Continue to collect real-time data on air quality to inform climate change mitigation efforts.

Policy EN–4.22: Continue to control residential wood smoke, manage fugitive dust and enforce industrial source controls.

Policy EN–4.23: Collaborate with the Port of Tacoma on strategies to reduce emissions from seaport activities through implementation of the Northwest Ports Clean Air Strategy.

Policy EN–4.24: Collaborate with the Tacoma-Pierce County Health Department to protect public health during wildfire smoke events.

Exhibit 36. Air Pollution Levels Across Tacoma, 2009–2011



Note: Locations and boundaries of areas identified as overburdened communities highly impacted by air pollution for the Improving Air Quality in Overburdened Communities Initiative (RCW 70A.65.020 of the Climate Commitment Act), as of March 1, 2023.

Sources: Washington Tracking Network, 2009-2011; WA State Department of Ecology, 2024; Seva Workshop, 2024.

SEA LEVEL RISE

Sea level rise is a long-term consequence of climate change, which threatens coastal communities with increased flooding, erosion, and inland storm surges. Understanding and planning for climate change impacts such as sea level rise encourages communities to adapt and builds more resilient systems.

Policy EN-4.25: Increase coastal ecosystem restoration to help protect against soil erosion, storm surges, and sea level rise. Prioritize restoration in areas where natural habitats provide additional flood protection to nearby communities or within the identified priority watersheds.

Policy EN-4.26: Identify opportunities to encourage soft shore armoring and adaptive strategies that support restoration activities and address sea level rise. Deprioritize hard shore armoring.

Environmental Justice

GOAL EN-5: Black, Indigenous, and People of Color (BIPOC) and historically overburdened communities are protected from climate and environmental health risks and have equitable access to clean, healthy parks, tree canopies, green spaces, waterways, and other natural assets that support well-being and resilience

Policy EN-5.1: Collaborate with Tribal governments, Indigenous-led organizations, local environmental groups, and residents to develop stewardship programs for Tacoma's waterways, wetlands, urban forests, and passive open spaces. Acknowledge the cultural importance of natural resources for livelihoods and cultural survival through educational events. Prioritize culturally relevant educational events on watershed health, pollution prevention, wetland preservation, and the role of these ecosystems in community resilience and environmental health, in overburdened communities.

Policy EN-5.2: Identify neighborhoods with limited access to parks, green spaces, and tree canopy. Prioritize these areas for green infrastructure investments, such as new parks, greenways, and tree planting, to improve air quality, reduce heat, and provide safe, accessible natural areas for recreation.

Policy EN-5.3: Conduct community assessments to identify and address barriers that prevent equitable access to natural resources and green spaces, especially in overburdened communities.

Policy EN-5.4: Expand air, water, urban heat, and soil quality monitoring in neighborhoods adjacent to industrial sites, highways, and other high-risk areas. Make data publicly available in accessible formats, and develop targeted pollution reduction initiatives to address environmental health risks in overburdened communities.

Policy EN-5.5: Partner with community colleges and workforce programs to develop accessible green jobs training and apprenticeships that focus on skills in renewable energy, urban forestry, water conservation, and sustainable agriculture. Collaborate with local organizations that empower historically marginalized communities and provide pathways to long-term employment in the green economy, ensuring living wages, benefits, and opportunities for ownership for workers from underrepresented communities.

Policy EN-5.6: Develop a Just Transition framework to provide retraining, financial assistance, and job placement support for workers impacted by the transition away from fossil fuels.

Policy EN-5.7: Require Community Benefit Agreements for large-scale infrastructure and development projects, ensuring that benefits, such as local job creation and improved green spaces, directly support the communities most affected by environmental and climate risks.

Policy EN-5.8: Work with community members in flood-prone and high-heat neighborhoods to develop and implement community-driven adaptation projects, such as rain gardens, permeable pavements, and shade structures. Prioritize solutions that address local climate risks while providing environmental benefits and enhancing the public realm.

Policy EN-5.9: Require Health Impact Assessments for large development projects, especially within overburdened communities, to understand potential public and environmental health impacts.

Watershed Health

GOAL EN-6: Watershed-scale planning restores and protects natural resources that will maximize the net-gains in ecological functions of Tacoma's environmental assets.

Policy EN-6.1: Develop management plans for each of the city's watersheds, starting with the priority watersheds identified in the City's Urban Watershed Protection Plan. Coordinate and partner with community-based organizations, institutions, other government entities and jurisdictions.

Policy EN-6.2: Monitor the existing ecosystem health, existing hydrology and water quality, and fish and wildlife habitat processes and functions with the Tacoma Watershed Insights Tool.

Policy EN-6.3: Improve protections to watershed processes by tailoring zoning and subdivision regulations, sensitive area protections, clearing and grading limitations and stormwater mitigation requirements that are appropriate for each watershed based on the findings of the watershed-based analysis, the community's vision for population and job growth and the requirements of the Growth Management Act.

Policy EN-6.4: Maintain the educational outreach program and voluntary incentives that encourage property owners to use low impact development best management practices for improved stormwater systems and continue to rely on partnerships with not-for-profit organizations and governmental agencies.

Policy EN-6.5: Engage with community members and watershed stakeholders, with focused efforts that engage underserved and overburdened communities, to ensure that improvements to the watershed are experienced and accessible to the community.

Policy EN-6.6: Consult with the Puyallup Tribe of Indians to understand priorities, coordinate on best practices for watershed management, and collaborate on watershed management projects to ensure treaty rights and obligations are honored.

Policy EN-6.7: Ensure adequate resources, such as staff and funding, to manage Tacoma's environmental assets and to educate the public about the benefits of Tacoma's natural resources.

WATERSHEDS. A watershed is a geographic region within which water drains into a particular river, stream or body of water. Tacoma is located within the lower watershed of Puyallup and Chambers/ Clover Watersheds. The upper watershed receives the highest amount of rain and snow which feed numerous small, steep mountain streams. In the middle watershed, smaller streams flow together to form larger streams. These streams are less steep, often located in small valleys with wetlands, and provide fish and wildlife habitat. The lower watershed has larger rivers with broader floodplains that drain into the Puget Sound. The Puget Sound, the rivers, and their floodplains provide critical salmon habitat. There are nine different basins, or watersheds, located within the city limits of Tacoma.

4.3 Priority Actions

ACTION STEP	LEAD DEPARTMENT
Periodically review and update the City's Critical Areas Ordinance, Groundwater Protection District, and Shoreline Master Program based on the best available science, giving special consideration to sea level rise and climate resiliency in updating buffer standards, shoreline armoring and soft shore stabilization standards, and flood hazard protections.	Environmental Services
For the required Comprehensive Plan review in 2029, develop a climate and resiliency element addressing the requirements of RCW 36.70A.070(9).	Environmental Services
Develop and implement a Climate Ready Urban Landscape and Habitat Plan to guide strategic land acquisition and investments to preserve and enhance urban open space and tree canopy in priority neighborhoods.	Environmental Services
Complete and implement the City's Urban Waters Protection Plan, including prioritized stormwater management activities and treatment retrofits in areas with the highest pollutant loading potential. Coordinate stormwater investments with other planning and environmental programs.	Environmental Services
Incorporate recommendations from the Puget Sound Partnership Action Agenda and Water Resource Inventory Area Salmon Recovery/Habitat Protection plans into City plans, programs, and regulations.	Environmental Services
Create a proactive habitat restoration plan for Commencement Bay to achieve a net gain of ecological functions during the Plan horizon.	Environmental Services
Continue to implement the Puget Sound Regional Council (PSRC) Four-Part Strategy to reduce GHG emissions.	Environmental Services
Periodically update the City's Climate Action Plan and support the implementation of identified priority actions.	Environmental Services

ACTION STEP	LEAD DEPARTMENT
Work with the Puget Sound Clean Air Agency (PSCAA) and WA State Department of Ecology to establish appropriate regional air toxic standards and mitigation approaches for facility and mobile emission sources. Include standards for limiting cumulative air quality impacts. Seek opportunities to expand community-based air quality monitoring to inform policy and regulatory development.	Environmental Services
Update the City's tree canopy and landscaping standards to ensure that that all future development contributes towards the City's 30% citywide canopy coverage and update standards to implement best practices for tree preservation and post-development tree care. Consider adoption of an Open Space Corridor overlay district to support the preservation of large, contiguous urban forest.	Environmental Services
Consider expansion of existing programs, such as Grit City Trees, which provides financial and logistical support for people who want to plant trees in public rights-of-way, as well as programs to increase tree planting on private property, or to support voluntary restoration efforts.	Environmental Services
Implement citywide programs to monitor the health of the city's environmental assets. Provide updated environmental assessments as part of the 5- and 10-year periodic review of the Comprehensive Plan. This could include: a. Greenhouse gas inventories b. Tree canopy assessments c. Water quality modeling d. Permit data and tracking e. Air quality monitoring	Environmental Services
Consider the resourcing needs to fully implement the City's environmental programs and seek funding via grants or partnership opportunities to expand the City's environmental programs capacity.	Environmental Services